

CHAPTER 2

Trail Alignment Analysis by Segment

An analysis of the various trail alignment alternatives is presented below for each segment. For planning purposes, the NBST has been divided into nine discrete segments (see Table 3 and Figure 3). A general description of each segment is presented first, followed by an environmental description that highlights resources such as slope, hydrology, wildlife, and geology. Detailed descriptions of alternative trail alignments and links are also provided, which highlight ownership, development opportunities and constraints, and trail head locations.

Table 3. Summary of proposed Northern Bonneville Shoreline Trail (NBST) segments.

SEGMENT	INCORPORATED	UNINCORPORATED	TOTAL MILEAGE
1 - Pleasant View to Brigham City			
Alternative A	8.2	6.0	14.2
Alternative B	8.7	6.2	14.9
2 - Brigham City to North of Deweyville			
Alternative A	7.7	11.2	18.9
Alternative B	10.4	10.0	20.4
3 - Linkage from Box Elder County to Cache County			
Alternative A	0.0	8.1	8.1
Alternative B	0.0	9.2	9.2
4 - Mendon to Wellsville			
Alternative A	2.2	7.2	9.4
Alternative B	0.4	9.8	10.2
5 - Wellsville to Avon			
Alternative A	0.0	13.3	13.3
6 - Avon to Blacksmith Fork Canyon			
Alternative A	0.2	8.3	8.5
Alternative B	0.4	7.8	8.2
7 - Blacksmith Fork Canyon to Logan			
Alternative A	2.1	6.4	8.5
8 - Logan to Smithfield			
Alternative A	3.1	4.4	7.5
Alternative B	3.7	5.8	9.5
9 - Smithfield to Idaho Border			
Alternative A	1.6	8.9	10.5
Alternative B	0.2	14.1	14.3



Figure 3. Northern Bonneville Shoreline Trail (NBST) segments.

(11x17)



Segment 1 - Pleasant View to Brigham City

General Description

The Pleasant View to Brigham City Segment extends from the Box Elder County and Weber County border to the eastern side of Brigham City (see maps 1 and 2 in Appendix G). The southern end of the segment will link to the planned endpoint of the SBST in Weber County as detailed in the USFS North Ogden to Pleasant View Trail Report. As of this publication, there are currently two alternative alignments in Weber County. The most likely alternative follows the PacifiCorp powerline corridor and ends where this corridor intersects Pole Patch Road. The other alignment alternative follows the Ogden-Brigham Canal. The NBST in this section will contour the foothills above Utah State Highway 126 through the communities of Willard, Perry, and Brigham City. Land ownership along this segment is generally private. The Wasatch-Cache National Forest is on the east side of the corridor, and there is a small section of U.S. Department of the Interior, Bureau of Land Management (BLM) land at the mouth of Perry Canyon.

Environmental Description

Slope

The foothill area along this segment is narrow with a mountainous, rocky scarp beginning at approximately 4,500 feet elevation. The foothill area below this is a moderate slope that varies in width but is very narrow adjacent to community-developed areas.

Hydrology

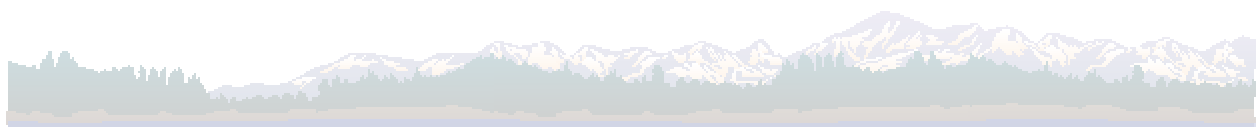
The Ogden-Brigham Canal traverses the foothills along the entire segment between 4,600 and 4,500 feet elevation. The canal enters Brigham City on the east side, where it then enters the Box Elder Canal at 6th Street. The Perry Canal also follows the foothills, beginning at the northeast side of Perry and ending in the same area as the Ogden-Brigham Canal. Four perennial streams cross the foothills along this segment. Willard Creek comes out of Willard Canyon northeast of the town of Willard. Facer Creek comes into the valley approximately 1.5 miles north of Willard Creek. Three-mile Creeks drains out of Perry Canyon south of the town of Perry. Box Elder Creek drains Box Elder Canyon, coming into the valley at Brigham City. There are several springs in the area, according to U.S. Geological Survey maps. The primary spring of interest is the Willard City Spring in Willard Canyon. No wetlands, other than perennial stream riparian corridors, have been identified.

Wildlife

The UDWR show no critical wildlife habitat along this segment. Primarily, the wildlife habitat and wetland areas are to the west of Highway 69.

Geology

Several faults follow the edge of the Wasatch Mountains along this segment, the largest of which is the Wasatch Fault. There is a large landslide area east of Brigham City that bisects the trail corridor.



Alignment Alternative A - PacifiCorp Powerline Corridor (14.2 Miles)

The PacifiCorp powerline corridor follows the entire length of this segment of the NBST. The preferred ending location for the SBST in Weber County is the intersection of the powerline corridor and Pole Patch Road. The NBST will link to the SBST at this point and then head north, contouring the foothills and following the powerline easement. Just south of Perry, the powerline corridor veers to the northeast and heads into steep terrain. At this point the trail alignment leaves the powerline corridor and contours the foothills along the Ogden-Brigham Canal above Perry. On the north side of Perry the trail rejoins the powerline corridor to its intersection with Highway 89. At this point the trail will follow (not cross) Highway 89 to its intersection with Highway 90. Here, it is necessary that the trail cross the highway (this obstacle is discussed in greater detail below). The trail will then contour the foothills out of the canyon where it rejoins the powerline corridor and continues north of Brigham City.

Ownership

Ownership along this segment is private, except for a small area at the mouth of Perry Canyon that is owned by the BLM. Ownership along the PacifiCorp powerline corridor is assumed to be private, with PacifiCorp owning an easement for the powerline to cross these private lands. It is possible that there are places where PacifiCorp has ownership of the powerline corridor lands. Research into PacifiCorp easement and ownership issues along this segment will need to be conducted (see the Working with Utilities section in Chapter 4). The small section that follows the Ogden-Brigham Canal is under private ownership with the canal company owning an easement for canal operation.

Trail Development Opportunities

- ❖ The PacifiCorp powerline corridor easement may facilitate easier trail development because of the ability for easement access and reduced property ownership issues.
- ❖ Approximately 2 miles of this alignment will cross public lands (USFS and BLM), thus reducing ownership issues.

Trail Development Constraints

- ❖ Private property issues that include the Pole Patch area at the southern most portion of the trail.
- ❖ Crossing canyons at Willard Canyon, Facer Creek, and Perry Canyon.
- ❖ The Box Elder Canyon and Highway 89 crossing poses a major trail obstacle because it is a heavily traveled four lane highway. Crossing options at the mouth of the canyon include a pedestrian bridge overpass or a tunnel underpass east of the Highway 89 / State Route (SR) 90 interchange. The Utah Department of Transportation (UDOT) is the agency that would assist in planning this road crossing. A similar overpass, crossing four lanes and including all ramps and associated retaining walls, was constructed on the SBST at Parley's Canyon and Interstate 80. The total costs for this project were \$2,400,000. An alternative would be to cross using the existing deer tunnel crossing just west of Mantua. This would require the trail to go up Box Elder Canyon approximately 2 miles and then back down to the mouth of the canyon. However, the UDWR does not support this suggestion (see UDWR letter in Appendix D).



Trailheads

- ❖ Mountain View Park east of Perry, Utah - There is a park at the edge of the foothills adjacent to the Ogden-Brigham Canal. This would provide a useful trailhead for the town of Perry. Approximately 0.25 mile of trail that links the trailhead to the powerline corridor would need to be constructed.
- ❖ Willow Creek Park east of Willard, Utah - A park near the two water tanks in Willard, at the base of the foothills, could provide trail access. Approximately 0.25 mile of trail that links the trailhead to the powerline corridor would need to be constructed.
- ❖ Knudson Property Trailhead- This is located on the south east side of the interchange of Highway 89 and SR 90 at the mouth of Box Elder Canyon. Brigham City has acquired this property for future trailhead development.

Alignment Alternative B - Ogden-Brigham Canal (14.9 Miles)

The Ogden-Brigham Canal corridor follows the entire length of this segment of the NBST. This is a secondary alternative alignment for the SBST ending at the Box Elder County/ Weber County line. The NBST will link to the SBST at this point and then head north, contouring the foothills while following the canal corridor to Highway 89. At the highway, the trail will head east to the Knudson Trailhead. Here, it is necessary that the trail cross Highway 89 (this obstacle is discussed in greater detail below).

Ownership

Ownership along this segment is private, except for a 0.25-mile segment at the mouth Cook Canyon that is owned by the USFS. Ownership along the Ogden-Brigham Canal corridor is assumed to be private, with the canal company owning an easement for the canal to cross these private lands.

Trail Development Opportunities

- ❖ The Ogden-Brigham canal corridor easement may facilitate easier trail development because there is a small road adjacent to the canal the entire length that would function as a trail. This existing corridor would require very little, if any, trail construction.

Trail Development Constraints

- ❖ Possible opposition from the Ogden-Brigham Canal Company because of liability issues.
- ❖ Possible opposition from private property owners along the canal.
- ❖ Box Elder Canyon and Highway 89 crossing (see discussion under Alternative A).

Trailheads

See the trailheads section of Alternative A.



Other Trail Alignment Opportunities

Other trail route alternative considerations that are possible along this segment consist of existing jeep roads and established trails that are located along the foothills and east of the alignments described above. The “high road” and the White Rock Trail that start just north of Willard are possible alternative routes, as are several other trails and unimproved roads that skirt the eastern foothills.

Potential Trail Linkages

There are several potential trail links that can be made along this segment. These include:

- ❖ the existing trail around Willard Bay;
- ❖ links to existing recreation facilities in Willard, Perry, and Brigham City;
- ❖ and linking to the trails planned for Brigham City at the mouth of Box Elder Canyon.

Segment 2 - Brigham City to Deweyville

General Description

The trail segment from Brigham City to Deweyville starts at the mouth of Box Elder Canyon and travels north along the western foothills of the Wellsville Mountains and past Deweyville approximately 3 miles (see maps 2, 3, and 4 in Appendix G). The primary views along this segment will consist of the Bear River Valley and the Cache National Forest. The trail has the opportunity to follow a number of existing rights-of-way, including the PacifiCorp powerline corridor. The existing trail system policy that Brigham City and Box Elder county have developed will maximize links to the proposed NBST. The potential of having the trail connect recreational users to the Bear River Migratory Bird Refuge and visitors center is a real possibility. The land ownership along this segment is a mixture of public and private lands, with the majority of this trail segment following existing rights-of-way.

Environmental Description

Slope

The foothill area along this segment is narrow with a mountainous, rocky scarp beginning at approximately 4,400 feet elevation. The foothill area below this is a moderate slope that varies in width but is very narrow adjacent to community-developed areas and has a western aspect. The Wellsville Mountain Range has the steepest rise to run ratio in North America.

Hydrology

The NBST crosses Box Elder Creek and a water pipeline at the mouth of Kotter Canyon. The Hammond East Branch Canal is the most prevalent canal along this segment and starts near the mouth of Antimony Canyon traveling north through Honeyville. A smaller North String Canal ditch originating from Rees Spring is located to the west of the proposed trail alignment. A dozen intermittent streams that drain the Wellsville Mountains traverse this segment. There are also a number of water tanks, springs, and ponds



that are adjacent to the proposed trail. The Acme and Honeyville culinary drinking water sources are both springs located east of Honeyville.

Wildlife

One mile past Crystal Hot Springs, the corridor enters the Malad/Bear River Riparian Corridor area as mapped by the UDWR. The proposed trail follows this feature for approximately 4.5 miles.

Geology

The Wasatch Fault runs parallel to the foothills along the entire segment. The trail will need to cross a landslide area north of Box Elder Canyon that is approximately 0.25-mile wide.

Alternative A - PacifiCorp Powerline Corridor (18.9 Miles)

This alternative will follow the PacifiCorp powerline corridor the entire length of the segment to Honeyville. It will connect to the southern segment of the trail at the Highway 89 road crossing near the area planned for a Brigham City trailhead. It will follow the toe of the slope east of development in Brigham City, because of the area's steep topography, for approximately 1.5 miles. The trail then intersects the powerline east of Rees Springs and follows the powerline for the remainder of the segment past Honeyville (approximately 14 miles).

Ownership

Land ownership along this trail alternative is generally private, with short crossings of public lands. A small parcel at the mouth of Box Elder Canyon is owned by Brigham City and is planned for a future trailhead. A 0.5-mile segment crosses the Wasatch-Cache National Forest directly east of Honeyville. Ownership along the PacifiCorp powerline corridor is assumed to be private, with PacifiCorp owning an easement for the powerline to cross these private lands. It is possible that there are places where PacifiCorp has ownership of the powerline corridor lands. Research into PacifiCorp's easement and ownership issues along this segment will need to be conducted (see the Working with Utilities section in Chapter 4).

Trail Development Opportunities

- ❖ The PacifiCorp powerline corridor easement may facilitate easier trail development because of the ability for easement access and reduced property ownership issues.
- ❖ The topography of the area contains few obstacles and is generally very good for trail development.

Trail Development Constraints

- ❖ Property issues include the ability to use the powerline corridor easements for trail development

Trailheads

- ❖ Brigham City is planning a trailhead on the east side of Box Elder Canyon on a piece of donated land that is now a gravel pit.
- ❖ Honeyville City Park located on the east side of Honeyville, Utah.
- ❖ Deweyville City Park located on the east bench of Deweyville, Utah.

Alignment Alternative B - Hammond East Branch Canal (20.4 Miles)

This trail alternative primarily follows the Hammond East Branch Canal with short portions following the powerline corridor. It will connect to the southern segment of the trail at the Highway 89 road crossing near the area planned for a Brigham City trailhead. It will follow the toe of the slope east of development in Brigham City, because of the area's steep topography, for approximately 1.5 miles. The trail will then intersect the powerline east of Rees Springs and follow the powerline to its intersection with the Hammond East Branch Canal at Antimony Canyon. The trail would then follow the canal corridor to Deweyville. From Deweyville, the trail follows a jeep road for approximately 1.5 miles to the intersection of the powerline corridor. The trail follows the powerline corridor to the end of the segment (approximately 2 miles).

Ownership

Land ownership along this trail alternative is generally private. A small parcel at the mouth of Box Elder Canyon is owned by Brigham City and is planned for a future trailhead. Ownership along the canal corridor is private, with the canal company owning an easement for the canal to cross these private lands.

Trail Development Opportunities

- ❖ The canal corridor has a road that would readily function as a trail with very little trail construction required.
- ❖ The canal corridor contours the foothills relatively close to the communities along the trail, thus providing easy trail access for residents.
- ❖ The topography provides for a relatively flat trail that would be easily negotiated by many trail users.
- ❖ No crossing of roads or major landscape features is required.

Trail Development Constraints

- ❖ Possible opposition from the Hammond East Branch Canal Company resulting from liability issues.
- ❖ Possible opposition from private property owners along the canal.

Trailheads

See Alternative A for trailhead descriptions.

Other Trail Alignment Opportunities

Other trail route alternative opportunities that are possible along this segment consist of existing fire/four-wheel drive roads that contour the foothills above Honeyville and Deweyville. These established roads could be used to connect various segments of both Alternatives A and B to the north and south. These roads cross the Wasatch-Cache National Forest for approximately 0.5 mile and also cross the Wellsville



Wilderness Area at three points. The wilderness sections are approximately 0.2 mile total and could easily be avoided by constructing a link trail outside of the wilderness boundary.

Potential Trail Linkages

There are several potential trail links that could be made along this segment. These include:

- ❖ the Coldwater Canyon Trail that crosses the Wellsville Mountains (this trail is in the Wellsville Wilderness Area and is not open to bicycles),
- ❖ the Crystal Hot Springs recreation area,
- ❖ the Bear River area,
- ❖ the Fort Call Historical Monument, and
- ❖ linking to the trails planned for Brigham City at the mouth of Box Elder Canyon.

Segment 3 - North Wellsville Mountain Connection

General Description

The trail segment around the north end of the Wellsville Mountains begins approximately 3 miles north of Deweyville (see maps 5, 6, and 7 in Appendix G). It contours around the north end of the Wellsville Mountains near the Bonneville Shoreline terrace south of Highway 30. This is the primary NBST connection between Box Elder and Cache Counties, which may be responsible for trail development. Land ownership along this segment is entirely private. Alternatives consist of existing corridors and newly constructed trail.

Environmental Description

Slope

The foothill area along this segment has a north to northeast aspect. The topography is rolling with elevations approximately 5,000 feet. There are two prominent knolls in the corridor that can provide scenic views.

Hydrology

The trail crosses Cottonwood Creek, Sleepy Hollow Creek, Willow Creek, and Three-mile Creek. There are eight springs located in the trail corridor near the community of Mendon, including Yonk Spring, Coldwater Spring, and Deep Gorge Spring. There are no wetlands along the route.

Wildlife

A majority of this segment is in the Malad/Bear River riparian corridor area as mapped by the UDWR. The segment follows this corridor for approximately 5 miles.



Geology

The West Cache (Wellsville) fault runs parallel to the foothills on the east side of the Wellsville Mountains near the historic Lake Bonneville Shoreline.

Alignment Alternative A - Four-Wheel Drive Road Corridor (8.1 Miles)

This alternative begins at the PacifiCorp powerline corridor and the four-wheel drive road just east of Collinston. The trail then follows the four-wheel drive road east to the Cache County line. At this point the trail turns south, following the road down Three-mile Canyon and continuing on the road to its intersection with the Wellsville Mendon Lower Canal.

Ownership

Land ownership along this trail alternative is both private and public. The powerline corridor is private, with PacifiCorp owning easements for the powerline. The four-wheel drive road between the powerline corridor and Cottonwood Canyon is a private road. Beyond Cottonwood Canyon, the alignment follows the Dairy Valley Road, which is a county road.

Trail Development Opportunities

- ❖ The use of the four-wheel drive road allows for trail construction in an existing developed and disturbed road corridor.
- ❖ The topography lends itself to trail development, and the hilly nature of the area adds visual interest and some buffering from the nearby highways.
- ❖ The topography of the area contains few obstacles and is generally very good for trail development.

Trail Development Constraints

- ❖ The NBST is required to be nonmotorized, thus requiring separation of motorized and nonmotorized uses along the road corridor.
- ❖ The road/trail corridor is adjacent to several springs that may be impacted by trail development.
- ❖ Private landowners may be reluctant to accommodate a trail across their land and agricultural areas.

Trailheads

No trailheads are proposed along this segment.

Alignment Alternative B - Old Railroad Bed Corridor (9.2 Miles)

The old railroad bed option allows the trail to follow the powerline corridor for 1.5 miles before merging with the railroad bed at the point of Cottonwood Canyon. The trail then bends around the northern extent of the Wellsville Mountains, passing outside of the knolls and continuing along the historic Lake Bonneville Shoreline. The trail passes over Three-mile Creek and ends northwest of Mendon.



Ownership

Land ownership along this trail alternative is generally private. This alternative crosses a considerable amount of private agricultural lands as it follows the old railroad bed. Ownership along the powerline corridor is private, with PacifiCorp owning an easement for the corridor to cross these private lands.

Trail Development Opportunities

- ❖ The old railroad bed provides an existing clear grade to build the trail.
- ❖ The topography provides for a relatively flat trail that would be easily negotiated by many trail users.
- ❖ No crossing of roads or major landscape features is required.

Trail Development Constraints

- ❖ Possible opposition from the agricultural land owners if the trail follows the old railroad bed.
- ❖ The construction costs for this alternative are increased by the necessity of a longer route around the northern extent of the mountain range.

Trailheads

No trailheads are proposed along this segment.

Other Trail Alignment Opportunities

Other trail route alternative opportunities that are possible along this segment consist of existing fire/four-wheel drive roads that contour the foothills north of Deweyville. These established roads could be used to connect various segments of both Alternatives A and B to the north and south. These roads would act as short cuts between the two alternatives.

Potential Trail Linkages

There is an important trail linkage that can be made along this segment. This includes:

- ❖ Access from the west side of the Wellsville Mountains to the east, connecting two major segments of trail. This link is the most straight forward in terms of Cache County trails linking with Box Elder County trails.

Segment 4 - Mendon to Wellsville

General Description

This segment of the BST links two towns, Mendon and Wellsville, located on the eastern Wellsville Mountains (see maps 7, 8, and 9 in Appendix G). The trail would extend from northwest of Mendon to Highway 89 south of Wellsville in a north/south orientation. The trail route would follow existing canal



roads or foothill contours between the cultivated agricultural lands and the Wasatch Cache National Forest. The land ownership where the trail routes occurs is completely private. The trail segment between these two towns, where there are no facilities to accommodate recreational use now, will encourage pedestrian traffic within and through these two communities.

Environmental Description

Slope

The slope aspect for this segment of trail is to the east. The terrain is relatively flat to rolling hills and has an average elevation of 4,800 feet.

Hydrology

The trail crosses a number of perennial and intermittent streams as well as irrigation canals. The Wellsville Mendon Lower Canal and the Wellsville Mendon Upper Canal present two possible corridors for the trail route. Pole Canyon, Deep Canyon, Gibson Canyon, Coldwater Canyon, Shumway Canyon, Brushy Canyon, Pine Canyon, and Wide Canyon all produce seasonal streams that would impact the trail along this segment. Bird Canyon stream is the only perennial stream that would come in contact with the trail, and the possibility of having to bridge this stream exists.

Wildlife

The trail does not impact any critical wildlife range along the foothills of the Wellsville Mountains.

Geology

The trail segment parallels many fault lines along the foothills of the Wellsville Mountains. The largest fault in Cache Valley, the Western Cache Fault, is along this segment of the trail. There are a number of land slide areas along the trail, the largest of which is at the mouth of Brushy Canyon.

Alternative A- Wellsville Mendon Lower Canal (9.4 Miles)

The trail will follow existing canal roads and pedestrian paths that parallel the Wellsville Mendon Lower Canal. The trail begins 1 mile northwest of Mendon and continues south passing the town of Wellsville to the west and ending at Highway 89.

Ownership

Land along this segment is private with the canal company having an easement through the land for the canal.

Trail Development Opportunities

- ❖ The trail route follows existing corridors allowing the construction cost to be minimal.
- ❖ The trail is relatively close to the two towns and encourages pedestrian use.
- ❖ The linkage of Wellsville and Mendon by the trail provides economic and social benefits.
- ❖ Two communities will be able to share in the trail responsibilities.

Trail Development Constraints

- ❖ The trail passes through private land and land use issues may arise.
- ❖ The trail is relatively close to the two towns causing privacy concerns.

Trailheads

Trailhead possibilities along this segment include:

- ❖ Pioneer Park on the west bench of Mendon,
- ❖ the northwest trailhead located on the Wellsville Mendon Lower Canal,
- ❖ bottom of Pine Canyon as the trail crosses the gravel road, and
- ❖ the trailhead at Highway 89 near Wellsville that will need to be constructed.

Alternative B- Eastern Foothills of the Wellsville Mountains (10.2 Miles)

The trail begins near the mouth of Pole Canyon at an elevation of 5,100 feet. The trail then follows the toe of the slope south, contouring between the agricultural land to the east and the Wasatch Cache National Forest to the west. This segment between the two communities is considerably further west from the population centers than Alternative A. The trail segment ends as it meets Highway 89 near 1600 South (Mount Sterling Road).

Ownership

The land along this alternative route borders both public and private properties. The private land is mostly in agricultural use. The trail parallels USFS land and wilderness areas.

Trail Development Opportunities

- ❖ The trail route would provide the most rural setting between Mendon and Wellsville.
- ❖ The trail topography is relatively uniform, which aids in construction of the trail.

Trail Development Constraints

- ❖ The trail route does not follow any existing corridors.
- ❖ The trail would border and pass through private land, which might become a land use issue.

Trailheads

The trailhead for the north and south side of this trail segment includes:

- ❖ the mouth of Pole Canyon, and
- ❖ a constructed location near Mount Sterling and Highway 89.

Other Trail Alignment Opportunities

There are no other easily defined alternatives.

Potential Trail Linkages

There are several potential trail links that can be made along this segment. These include:

- ❖ the town of Mendon to the town of Wellsville,
- ❖ Deep Canyon and Stewart's Pass, and
- ❖ Coldwater Pond.

Segment 5 - Wellsville to Avon

General Description

This segment of the BST travels from the southwest foothills of the Wellsville Mountains within Cache Valley to the eastern foothills above Avon, Utah (see maps 9, 10, 11, and 12 in Appendix G). The trail winds its way from Highway 89 and Mount Sterling east, following the 5,100-foot contour, through some of the most diverse back country and agricultural lands in Cache Valley. The terrain can be characterized as rolling hills to steep slopes. This segment intersects with the Little Bear River near Avon. The route ends to the southeast of Avon at the mouth of East Canyon.

Environmental Description

Slope

The slope aspect for this segment of the trail varies considerably but is primarily northern. The terrain is characterized as rolling to steep but has long stretches of flat segments, especially as the trail parallels the Little Bear River.

Hydrology

The Little Bear River will be paralleled by the trail and then crossed at an existing bridge leading into Avon. The proposed route has little contact with any other streams or springs.

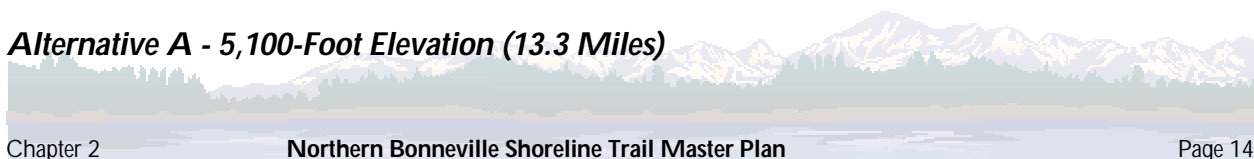
Wildlife

The trail intersects the Little Bear River, which includes wildlife habitat.

Geology

The trail comes in contact with the Western Cache Fault (Wellsville Fault) within the first 2 miles of the trail as it crosses Highway 89. The trail crosses the Eastern Cache Fault (Logan Fault) as the trail intersects the Little Bear River. There are a number of remote land slide areas near the middle of this trail segment.

Alternative A - 5,100-Foot Elevation (13.3 Miles)



This southern route is the major link between the western segment of the NBST to the eastside of Cache Valley. The trail is completely rural and traverses some of the most visually interesting portions of Cache Valley. The trail will cross agricultural lands, rolling hills, forested riparian areas, and a river corridor. Jeep trails will be utilized where necessary. The land the trail crosses is mostly private.

Ownership

The property along this alignment is privately owned agricultural land.

Trail Development Opportunities

- ❖ a link between the west side of Cache Valley to the east side of Cache Valley,
- ❖ the trail provides a visually interesting route through rural Utah, and
- ❖ the trail offers a number of self contained loops beneficial to equestrian and bicycle use.

Trail Development Constraints

- ❖ the trail does not follow any existing pedestrian paths and would need to be constructed from scratch,
- ❖ the trail is relatively remote, and
- ❖ population levels in the surrounding area are low and trail use might not be adequate to justify construction.

Trailheads

Trailheads along this segment would include:

- ❖ the mouth of East Canyon,
- ❖ the public park in Avon, and
- ❖ and a constructed trailhead near Mount Sterling.

Other Trail Alignment Opportunities

Other routes along this segment include following the true 5,100-foot contour elevation completely through to Avon. The corridor along the Little Bear River could be accessed for a longer portion of trail leading up and into the mouth of East Canyon. The jeep trails in this area could also support pedestrian traffic.

Potential Trail Linkages

The links along this portion of the trail include:

- ❖ East Canyon,



- ❖ Avon,
- ❖ the Little Bear River,
- ❖ the Great Western Trail,
- ❖ Liberty,
- ❖ Hyrum Reservoir State Park, and
- ❖ the jeep trail linking Mantua to Avon.

Segment 6 - Avon to Hyrum

General Description

The trail route for this segment of the NBST will begin at a trailhead just north of McKenzie Flat at the mouth of East Canyon and continue along the 5,100-foot contour elevation into Hyrum at the mouth of Blacksmith Fork Canyon (see maps 12 and 13 in Appendix G). The trail would be located in the foothills west of the Wasatch Cache National Forest.

Environmental Description

Slope

The slope aspect for this section of trail is west and can be described as rolling hills to steep escarpments.

Hydrology

The trail along the historic Lake Bonneville Shoreline will intersect several intermittent streams, a perennial stream at the base of East Canyon, and the Blacksmith Fork River east of Hyrum City.

Wildlife

The Blacksmith Fork Canyon Trailhead is located in Utah State Wildlife Reserve land, but the remainder of the trail does not contact any critical wildlife areas.

Geology

The trail parallels the Eastern Cache Fault on both sides along its entire length. The route does not contact any landslide areas.

Alternative A - 5,100-Foot Contour (8.5 Miles)

This alternative route will follow existing jeep roads east and north of Avon at the 5,100-foot elevation before crossing the mouth of Hyrum Canyon. The trail then continues north along the 5,100-foot contour into the Blacksmith Fork Canyon. The terrain along this segment of trail is relatively flat and offers excellent opportunities for a trail. The existing trails on the eastern foothills in this area are favorites to recreational users.



Ownership

The land along this section of trail is privately owned.

Trail Development Opportunities

- ❖ The trail will follow the 5,100-foot contour, which will minimize construction costs.
- ❖ The trail links Avon and Hyrum.

Trail Development Constraints

- ❖ The trail crosses private land, which raises the question of land use possibilities.
- ❖ In some sections the trail follows roads that allow motorized vehicles.

Trailheads

An established UDWR Trailhead is located near the mouth of Blacksmith Fork Canyon. This large parking area is easily accessed by trail users from the south and north.

- ❖ There are three trailhead possibilities along this stretch of trail. The trailhead at the opening of East Canyon will serve Avon and trail users coming from Highway 165. The Paradise City Park would be a possible link for the town to the NBST, and the trailhead located at the base of Blacksmith Fork Canyon will offer the ability to stop or start the trail system for residents of Hyrum.

Alternative B- PacifiCorp Powerline Corridor (8.2 Miles)

This alternative follows the powerline corridor easement that starts in the town of Paradise and continues north to the entrance to Blacksmith Fork Canyon. The wide corridor easement allows the trail to meander through the foothills instead of taking a bee-line from point A to point B. The powerline corridor is located high on the bench at or above the 5,000-foot contour. The route offers trail users a rolling hill terrain and great views of the southern end of Cache Valley.

Ownership

The property along this section of trail is privately owned.

Trail Development Opportunities

- ❖ The corridor easement and trail already exist and would not require extensive construction, and
- ❖ this segment of trail would link more urbanized areas to more natural areas including State lands.

Trail Development Constraints

- ❖ The powerline corridor is not contiguous through the entire segment limiting connections, and
- ❖ the trail is considerably high on the foothills and might be difficult to access.

Trailheads

The trailheads would be the same as described for Alternative A.

Other Trail Alignment Opportunities

Other opportunities include the jeep trails and unimproved roads leading out of Avon and Paradise east and into the eastern foothills. The Paradise and Hyrum Canals offer direct links into the towns and the possibility of intersecting the NBST.

Potential Trail Linkages

The links along this segment of trail consist of:

- ❖ the town of Avon,
- ❖ East Canyon,
- ❖ the Little Bear River,
- ❖ the town of Paradise,
- ❖ Paradise Dry Canyon,
- ❖ the City of Hyrum, and
- ❖ Blacksmith Fork Canyon and River.

Segment 7 - Blacksmith Fork Canyon to Logan

General Description

The trail segment linking Hyrum to Logan will utilize the existing deer fence trail, the PacifiCorp powerline corridor, and the Blacksmith Fork River corridor, all of which are located between private land to the west and public, state, and USFS land to the east (see maps 13 and 14 in Appendix G). The trail crosses rolling hills to steep slopes and existing smaller canyons as it moves south to north. This trail segment will connect State wildlife reserve lands and Federal lands in a number of locations.

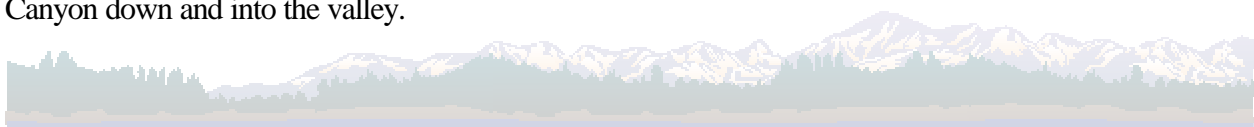
Environmental Description

Slope

The slope aspect along this segment of the NBST is to the west. The terrain is characterized by rolling hills to steep inclines as the trail meets canyons and drainages along the route.

Hydrology

The trail comes in contact with several intermittent and perennial streams, as well as the Logan River, as the route travels north. The largest of the streams to be crossed is Spring Creek, which follows Providence Canyon down and into the valley.



Wildlife

The trail crosses UDWR wildlife habitat land at several points along this segment. State wildlife reserve lands are intersected for 0.5 mile, and normal to critical winter range for deer and elk are traversed for 3 miles.

Geology

The Eastern Cache fault is paralleled as the trail travels from Hyrum to Logan. The trail crosses several land slide areas along this segment.

Alternative A - PacifiCorp Powerline Corridor and Deer Fence Corridor (8.5 Miles)

The trail alignment will use established powerline and pedestrian trail corridors to travel from Hyrum to Logan. From the trailhead at the mouth of Blacksmith Fork Canyon, the trail will drop down into the Blacksmith Fork River corridor and head west for 0.25 mile before intersecting the deer fence trail road. The trail then travels north for 0.75 mile before joining the powerline corridor. The route will then continue north using both the deer fence trail road and the PacifiCorp powerline corridor.

Ownership

The land crossed by the trail is both publically and privately owned.

Trail Development Opportunities

- ❖ All of the sections along this segment of the NBST are following existing corridors, thereby minimizing the construction costs;
- ❖ two of Cache Valley's largest cities are linked by a travel corridor that promotes pedestrian use; and
- ❖ the trail location is relatively close to urbanized areas providing easy access to residents.

Trail Development Constraints

- ❖ Much of the trail crosses wildlife reserve lands,
- ❖ Some of the corridors suggested for use allow motorized traffic, and
- ❖ There is a busy road crossing at the bottom of Blacksmith Fork Canyon.

Trailheads

The following areas have been identified as possible trailhead locations:

- ❖ Two possible locations at the mouth of Blacksmith Fork Canyon on both the north and south side of SR 101,
- ❖ Harris Park at the entrance of Logan Dry Canyon,



- ❖ Providence Canyon entrance,
- ❖ Millville Canyon entrance, and
- ❖ First Dam Park at Logan Canyon entrance.

Other Trail Alignment Opportunities

An alternative trail route opportunity along this segment includes the Millville-Providence Canal. The canal is paralleled by an established service road that could accommodate pedestrian traffic. This canal trail could link the communities of Millville, Nibley, and Hyrum to the NBST. This alternative would follow the Millville-Providence Canal for 4 miles before linking into the Segment 7 at the mouth of Blacksmith Fork Canyon.

Potential Trail Linkages

Trail links along this segment include:

- ❖ Linking cities and their parks and trail systems along the trail, including Hyrum, Millville, Providence, Nibley, and Logan;
- ❖ Hyrum Reservoir State Park;
- ❖ Trails and recreation amenities in Blacksmith Fork, Millville, Providence, Logan Dry and Logan Canyons;
- ❖ Logan City Trail System;
- ❖ Logan River Trail; and
- ❖ A possible link from First Dam to the canal to the Dugway, down to Canyon Road and to Merlin Olsen Park.

Segment 8 - Logan to Smithfield

General Description

This segment has a section of trail, Logan Canyon to Green Canyon, that will be the first portion of the NBST built in Cache Valley. The complete trail route travels north from the mouth of Logan Canyon into the City of Smithfield (see maps 14 and 15 in Appendix G). This section has a number of possible routes including the existing powerline corridor, the Logan Hyde Park Smithfield canal, and the foothills between the agricultural lands and the Wasatch Cache National Forest. The trail will link the largest populated area in Cache Valley and its existing recreational trail systems to the NBST network. The trail skirts the Mount Naomi Wilderness Area between Logan Canyon and Green Canyon.

Environmental Description

Slope

The slope aspect of this section is to the west. The terrain along this section is a mixture of rolling hills, agricultural lands, and steep slopes at the many drainages and canyon crossings.

Hydrology

The trail will intersect many intermittent and perennial streams along the route, the largest of which is Birch Creek. The Logan Hyde Park Smithfield canal will also be paralleled and crossed in this segment.

Wildlife

The trail will be near the Mount Naomi Wilderness Area boundary but will not directly cross any normal or critical wildlife range.

Geology

The trail parallels the Eastern Cache (Logan) Fault along the entire segment. The trail will come into direct contact with land slide areas in five locations along the route.

Alternative A- PacifiCorp Powerline Corridor (7.5 Miles)

This segment of trail will start at the mouth of Logan Canyon and follow the Logan Hyde Park Smithfield canal for 0.75 mile before intersecting the powerline corridor just above Lundstrom Park. The trail then continues along the powerline easement north, ending at a trailhead at the mouth of Smithfield Canyon.

Ownership

The land the trail crosses is along easements granted to the powerline and canal companies. The easements are surrounded by private land.

Trail Development Opportunities

- ❖ The trail will utilize existing corridors, which will minimize construction costs;
- ❖ The first section of NBST will be built during the spring of 2002 and will add motivation for the surrounding communities to build their sections; and
- ❖ This trail segment links the most populated communities in Cache Valley to a trail system that encourages pedestrian use.

Trail Development Constraints

- ❖ The existing powerline corridor is rather straight and does not offer much in the way of diverse alignment opportunities, and
- ❖ Mendon private land/ privacy issues.

Trailheads

There will be four trailheads along this section of NBST:



- ❖ The southern most trailhead will be located on the north side of Highway 89 at the mouth of Logan Canyon.
- ❖ The Lundstrom Park Trailhead will be an easy access point for the neighborhood above Utah State University.
- ❖ Green Canyon, which is an established and popular destination for recreational users in all seasons, will provide the third trailhead along this segment.
- ❖ Smithfield Canyon marks the end of this segment to the north and will have a trailhead located along Summit Creek for the residents of Smithfield to access.

Alternative B- Foothill Alignment (9.5 Miles)

This route would follow the Logan Hyde Park Smithfield canal for 0.75 mile before intersecting the PacifiCorp powerline corridor. The trail would follow the powerline for 2 miles before picking up the 5,100-foot elevation contour. The trail would follow this elevation for a little less than 4 miles, ending at the trailhead in Smithfield Canyon. The trail would be located between agricultural lands and the Wasatch Cache National Forest.

Ownership

The land the trail crosses is a mixture of both public and private lands. The trail will use powerline and canal easements for the first 3 miles and then cross private land as it heads north.

Trail Development Opportunities

- ❖ This alignment offers a diverse route that would mimic the existing foothill contours, and
- ❖ The route allows users to be as far away from the populated areas as possible.

Trail Development Constraints

- ❖ The route does not follow any established trail and would need to be constructed, and
- ❖ The trail alignment in some places is located 1 mile from the populated area, thus creating the need for extensive links.

Trailheads

The trailheads proposed for Alternative B would be the same as described for Alternative A.

Other Trail Alignment Opportunities

The Logan Hyde Park Smithfield Canal offers another routing possibility. The trail alignment would intersect the canal above North Logan City and follow the canal easement to the trailhead in Smithfield Canyon. Another possibility would include the small segment of powerline corridor located just north of Smithfield. This corridor extends from the Cutler Marsh Area east and into the foothills north of the Smithfield Canyon mouth.

Potential Trail Linkages

- ❖ Logan City,
- ❖ Utah State University,
- ❖ Lundstrom Park,
- ❖ Green Canyon,
- ❖ North Logan City,
- ❖ Hyde Park City,
- ❖ Smithfield City, and
- ❖ Smithfield Canyon.

Segment 9 - Smithfield to Idaho

General Description

This trail segment connects the NBST to Idaho along a route that starts in Smithfield (see maps 15, 16, and 17 in Appendix G). The trail has several possible alternative routes including a powerline corridor, a foothills trail, and the Upper High Creek Canal. The trail will become a link between Smithfield and Richmond with possible future links to Idaho towns as well. The trail crosses variable terrain and land uses as it heads north. The predominant trail characteristic is rolling hills across agricultural lands. The trail is easily accessible from both Smithfield and Richmond.

Environmental Description

Slope

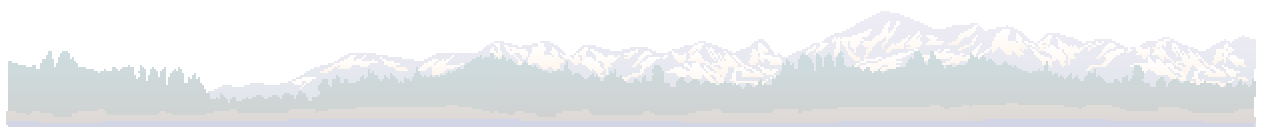
The trail along this section has a western aspect. The terrain is a mixture of rolling hills, agricultural land, and steep slopes around the entrances to the canyons.

Hydrology

The trail comes into contact with several intermittent streams and two perennial streams. The intermittent streams are crossed close to the opening of the canyons along this segment. Several of these are Nebo Creek, City Creek, and Cherry Creek. Cherry Creek and High Creek are the two perennial streams crossed by the trail.

Wildlife

The trail crosses approximately 5 miles of critical deer and elk winter range.



Geology

The trail crosses a number of land slide areas between Smithfield and Richmond. The Eastern Cache (Logan) Fault is paralleled along the entire segment of trail.

Alternative A- the PacifiCorp Powerline Corridor (10.5 Miles)

This trail alternative will start at the trailhead located in Smithfield Canyon and proceed north along the powerline corridor until it reaches the Ballentine Springs area. This powerline corridor may continue into Idaho, but the information can not be verified at this time.

Ownership

The land the trail would cross would be within the PacifiCorp powerline corridor easement.

Trail Development Opportunities

- ❖ The corridor the trail would follow already exists and would not require extensive construction, and
- ❖ The trail would provide a diverse section of terrain.

Trail Development Constraints

- ❖ The trail corridor does not pay respect to the topography of the land it crosses, and
- ❖ The powerline corridor may not reach the border of Idaho.

Trailheads

- ❖ Smithfield Canyon,
- ❖ Cherry Creek, and
- ❖ High Creek.

Alternative B- the 5,100-Foot Elevation Contour (14.3 Miles)

This trail alternative would begin at the trailhead located in Smithfield Canyon and proceed north along the 5,100-foot contour. The contour would wind the trail through both public and private lands. Private agricultural lands and State Wildlife Reserve Lands are the two most prevalent land uses the trail would contact. This route would be the most rural setting along this narrow section as the populated areas the trail passes are close to the mountains. The trail terrain is predominantly flat as the route stays relatively close to the 5,100-foot contour.

Ownership

The land along this segment is both publically held and privately owned.

Trail Development Opportunities

- ❖ The route would follow relatively flat terrain and would allow a trail, and
- ❖ The trail would stay away from the populated areas and provide a rural setting.

Trail Development Constraints

- ❖ The trail does not follow an existing corridor so construction would be more involved, and
- ❖ The trail does not meet up with an existing trailhead in Idaho.

Trailheads

The trailheads proposed for Alternative B would be the same as described for Alternative A.

Other Trail Alignment Opportunities

The extensive canal systems and the roads and paths that follow them would present good opportunities for possible routes. Upper High Creek Canal could be accessed from Richmond and then connect to the NBST at High Creek. Lower High Creek Canal could also be used as a western trail route that might tie into the Cutler Marsh trail system.

Potential Trail Linkages

The links along this segment that can be made include:

- ❖ Smithfield and Smithfield Canyon,
- ❖ Richmond,
- ❖ Wasatch Cache National Forest, and
- ❖ Cherry Creek and High Creek.

Other Potential Trail Linkages

Highway 89 / Wellsville Canyon

This link from Brigham City into Cache Valley would provide a 12.7-mile recreational route along the existing highway. The trail would be separated from the road and most likely be a paved surface. The link would intersect the NBST east of Brigham City at the proposed Knudson Trailhead and west of Wellsville at the proposed trailhead for segment five. This link would provide a more direct route from Box Elder County to Cache County. The community of Mantua would be connected to the NBST by this link.

Mantua to Avon

This 10.6-mile link would utilize existing jeep roads to cross from Mantua to Avon. The corridor would access more back country than many segments of the NBST. The distance from Avon to Brigham City using this suggested link and the link from Brigham City to Wellsville would be approximately 13 miles. Within the town of Mantua, there is a high level of interest and support from citizens and elected officials for this potential trail linkage. Mantua's general plan includes a trail system component and an ordinance establishing this trail linkage component is presently under development.



Mount Pisgah Road

This link to the NBST starts off of Highway 89 just south of the Dry Lake Area in Wellsville Canyon. The link would then continue east following the Mount Pisgah jeep road for 6.1 miles before intersecting with segment five of the NBST at Baxter Ridge. This access to the backcountry, Avon, Paradise, and the NBST would create ideal trails for both equestrian and mountain bike trail users.

Northern Bonneville Shoreline Trail (NBST) to Malad, Idaho

This link would continue the NBST from trail segment 3 north to the Idaho border. The trail would follow the Bear River corridor north to the power line station just east of the Cutler Reservoir. The trail would then use the land easements near the power line corridor to the Idaho State line.

Cutler Reservoir Lands

PacifiCorp is committed to further development of trails around Cutler Reservoir. This trail system will allow recreationists to access reservoir lands that contain some of Cache Valley's most important wetland ecosystems. The Cutler Reservoir Trail system can potentially be accessed from the NBST by three alternative trail corridors. These corridors do not intersect the NBST directly, but they do link to communities that are on the NBST Trail system (see Figure 2).

- ❖ The 8.0-mile Railroad Walking Trail, which follows an abandoned railroad corridor and bridge crossing south of Benson Marina, would link Logan City's trail system with the Cutler Reservoir.
- ❖ The 3.3-mile Bud Phelps Wildlife Management Area Walking Trail would link Logan City's trail system to Cutler Reservoir.
- ❖ The 3.4-mile Little Bear River Walking Trail would link Alternative A along Segment 3 of the NBST to the Little Bear River and Cutler Reservoir.

